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Development and international cooperation in the twenty-first century: the role of information technology in the context of a knowledge-based global economy

Contribution of the Economic and Social Commission for Asia and the Pacific to the theme of the high-level segment of the substantive session of 2000 of the Economic and Social Council

Development and international cooperation in the twenty-first century: the role of information technology in the context of a knowledge-based global economy

A regional perspective

Summary

The President of the Economic and Social Council for 2000, in consultation with the Bureau, requested the regional commissions to hold regional intergovernmental or expert group meetings on information technology for development in their respective regions and to report on the outcome of those meetings to the Council at its high-level segment in order to provide a regional perspective on the theme of the high-level segment, "Development and international cooperation in the twenty-first century: the role of information technology in the context of a knowledge-based global economy".

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All five regional commissions have submitted brief reports based on regional consultative meetings or on views solicited from their member States. The meetings of the ESCAP and ECLAC regions were hosted by the Governments of India and Brazil, respectively, on 20 and 21 June 2000. ECA held a high-level meeting, the first African Development Forum, from 24 to 28 October 1999 with the theme "The challenge to Africa of globalization and the information age". ESCWA held its expert group meeting on 15 and 16 May 2000. ECE circulated a draft report to all its member States and the comments received have been integrated in the Commission's report to the Council.

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I. Major recommendations, conclusions and decisions for the consideration of the Economic and Social Council

1. Taking cognizance of the growing digital divide that threatens to further marginalize the developing countries and exclude them from the revolution in information technology (IT), the Regional Round Table on Information Technology and Development adopted the following recommendations:

(1) The problems and issues faced by countries in the region in terms of readiness for the digital era should be systematically identified, and awareness of those problems and issues should be created, in order to assist interested countries to identify the areas where action is needed and to carry out the necessary interventions.

A system should be introduced of publishing a single composite index of readiness of each country for the digital era. That index would be a suitably weighted average of the scores on various relevant parameters, including the following:

(a) Access facilities, including:

(i) Information infrastructure; basic telecommunication infrastructure;

(ii) Internet availability and affordability;

(iii) Network speed and quality; bandwidth availability;

(iv) Availability of hardware, software, services and support in the local market;

(b) Education and training facilities;

(c) Networking of the society: incorporation of information and communication technology (ICT) into the way that things are done in the society, the economy and government and the proliferation of online communities;

(d) Network policy: a supportive policy environment, including telecommunications policy and cyber-laws;

(e) Evolution of appropriate ownership and management models of network resources;

(f) Evolution of appropriate business models that spur the flow of private investment into the digitalization of the society and economy;

(g) Degree of optimization of costs by full use of economies afforded by the convergence of technologies: scope for cost reduction and increasing the spread and reach of network access.

International or regional bodies such as the Economic and Social Commission for Asia and the Pacific (ESCAP) should undertake this task. The scores on individual parameters would clearly point to the set of actions necessary. The exercise suggested above could evaluate the success of steps already taken and identify new measures needed or generate a set of options for action. It would be up to national Governments to respond suitably to the identified challenges.

(2) Extensive human resources development initiatives in the region should be encouraged and facilitated.

People, not machines and computers, drive the entire ICT revolution. It is therefore essential to ensure that a large number of trained personnel are available to power the revolution. The specific requirements are highly variable in terms of time and context, and for this and various other reasons, programmes in this regard need to maximize the use of private sector competencies and entrepreneurship to build up continuously the necessary human resources. Creative partnerships between Governments, non-governmental organizations and private sector companies are essential, but Governments need to provide the impetus.

(3) Successful innovation should be encouraged in community and private sector participation in integrating ICT into the economy and society and in developing creative models of partnership between government, the private sector and non-governmental organizations.

Technology and cost are not the only issues relevant to the digitalization of societies and economies. Encouraging and selectively funding experiments, particularly in socially useful and relevant areas such as rural education, agriculture, medical services and employment that aim to creatively optimize cost, technology, ownership and management patterns, and business models in an integrated fashion

are necessary to speed up the diffusion of ICT in developing countries. Those models need to take full advantage of the following:

(a) The unique global competitive advantage that the Asian and Pacific region has in the field of IT-enabled services;

(b) The market for IT products and services that the growing economies of the region offer;

(c) The unprecedented opportunities for quantum reduction in costs through convergence of information, communications and entertainment (ICE) technologies and businesses. Less developed countries stand to gain more in this respect.

(4) While encouraging e-governance and community participation, the following socially relevant areas should be targeted to develop and demonstrate cost-effective integrated (convergence-based) solutions based on ICE technologies:

(a) Education on demand, particularly in rural areas;

(b) Health care, particularly in rural areas;

(c) Environmental education;

(d) Traditional knowledge dissemination and sharing;

(e) Government services (e-governance);

(f) Rural employment through IT-enabled services;

(g) Community entertainment facilities.

(5) Special programmes should be undertaken to enable landlocked and island countries to take full advantage of the location-independence of digital economic opportunity.

ICT offers a unique opportunity for countries to free themselves from the tyranny of geography. Employment opportunities in IT-enabled services, for example, are as accessible to island or landlocked countries as to any other country. Similarly, goods and services from such countries can be offered on the global market as efficiently as those from any other country through the use of ICT. Special programmes need to be designed to enable them to take advantage of this opportunity.

(6) Special programmes should be undertaken to exploit the manufacturing and service opportunities afforded by ICT to small and medium-sized enterprises (SMEs) to compete in the global marketplace.

ICT has created a level playing field for big and small companies alike in the global marketplace. No longer does a company need to have a physical presence globally (which is expensive). A presence in cyberspace is good enough to provide access to global markets. Many SMEs with good, globally competitive products or services languish because of their ignorance of how to use ICT to plug into the global marketplace. A special programme to create the requisite awareness, competencies and other support structures for SMEs for this purpose is highly desirable.

(7) Channels should be created for sharing experience and information, and for the development of norms and standards towards international standardization, wherever applicable; and a forum should be organized for experts, academicians, business representatives and government policy makers to meet periodically on a regional basis.

To foster regional cooperation, a project could be launched by a body such as ESCAP to enable sharing of experience among countries in the region on preparing for the digital era. ICT (web sites, bulletin boards, databases, etc.) should be used for this purpose, but workshops, conferences and round tables would also be needed to allow direct interaction periodically. The initiatives of ESCAP in trade facilitation are a good analogy. This forum could become a mechanism to address regional issues such as legal frameworks, norms and standards. Suitable modalities would need to be worked out for the creation and maintenance of the databases and information bases.

(8) Suitable technical assistance and technology transfer programmes should be designed to harness intraregional competencies to facilitate the transition of member countries into networked societies and economies.

One of the weakest links in designing appropriate policies to hasten the transition to a digital economy or society is the lack of sufficient expertise within Governments to deal competently with the complex issues involved. A minimum level of competence is needed even to access and assimilate expertise available in the market. Where Governments seek

technical assistance to carry the process forward, international bodies such as ESCAP could maintain panels of experts in the region that could assist the efforts of national Governments in countries that do not have the requisite expertise. The experience of developing countries such as India, which are believed to be forging ahead, could be used to foster South-South cooperation in this field.

(9) National/local language interface should be encouraged to facilitate the rapid diffusion of ICE technologies.

Communicative translation models and technologies available in the United Nations system and in member countries should be fostered and disseminated to countries in the Asian and Pacific region through a suitable programme to facilitate the rapid diffusion of new technologies.

(10) A special fund should be created at the regional level to facilitate the achievement of the objectives envisaged in the above recommendations.

The identification of necessary interventions and assistance in carrying out the identified interventions need funding. While the basic philosophy is to use private sector funding and enterprise as far as possible, demonstration projects and social sector projects will need funding. The idea is to use such funding to creatively synergize government, non-governmental organization and private sector resources and competencies through demonstration pilot projects.

II. Proceedings of the Regional Round Table

2. The Regional Round Table had before it two documents: (a) "Information technology and development I: commercial and industrial dimensions" (items 4, 5 and 6 of the agenda); and (b) "Information technology and development II: capacity-building, cooperation and social dimensions" (items 7 and 8 of the agenda). In addition, presentations were made on consensus-building, awareness creation and human resources development for adoption and use of IT; "Implications of IT-led development for new competitiveness development and management of new products and services; technical imperatives, gaps and affordability for IT and development; and characteristics of a knowledge-based economy and knowledge management for development.

A. Information technology and development I: commercial and industrial dimensions

3. In introducing the document, the secretariat described the current status of the diffusion of information technology in the region and the potential for the future introduction of IT. As advances in IT and electronic commerce could lead to significant improvement in the commercial and industrial sectors, open new marketing and employment opportunities and result in a rise in the living standards of the population, national capabilities to transfer, develop and benefit from the application of those technologies differed significantly among the countries of the region. Concerted national and complementary efforts through regional cooperation were required to promote widespread adoption of IT in the countries of the region. A number of national and regional actions were therefore suggested.

4. The Regional Round Table was of the view that, as IT was one of the main driving forces of globalization, it had a significant effect on the comparative advantage of countries and the competitiveness of their economies because of its enormous economic and social implications. It also brought significant change to markets, production, services and skill requirements, expanded educational opportunities and improved the quality of life. Although IT was expected to diminish both the skilled and the unskilled aspects of many traditional trades, it also created a demand for many new jobs. In that regard, 10 new and emerging ICT systems were described that could yield major enhancements in productivity and competitiveness in the commercial and industrial sectors.

5. The Regional Round Table stressed the need for the creation of a favourable policy framework conducive to the adoption and diffusion of IT development, citing requisite technological capability and competent human resources, in particular, as well as the creation of infrastructure for IT at the national and regional levels. While emphasizing the vital importance of Governments in that endeavour, the Regional Round Table expressed the strong belief that

all stakeholders should be involved in the adoption and diffusion of information technology and that the public and private sectors should be encouraged to participate in human resources development, research and development, and decision-making processes, and play a leading role in technology transfer and its application.

6. The Regional Round Table held the view that regional cooperation could significantly complement national efforts in the adoption and diffusion of information technology. For the successful implementation of national technology initiatives, it might be useful to work with neighbouring countries, particularly with regard to the creation of an information hub. Furthermore, regional cooperation was required for sharing data, information and experiences, and pooling resources for the adoption and transfer of information technology. In that connection, the Regional Round Table observed that, in general, the following areas of cooperation could be beneficial to countries in the region and the region as a whole: networking of regional libraries, regional language interface with computers, standardization of interfaces, human resources development, and a regional electronic data interchange network. It was also suggested that a regional fund for the promotion of transfer and diffusion of information technology could be considered and established.

7. The Regional Round Table suggested that, taking into account resource constraints, the efforts of ESCAP should be concentrated on meeting the most important and urgent needs of the countries of the region. Development of human resources was identified as a main priority area. Other priority areas for ESCAP activities included sharing of data and experiences, assessment of the implications of IT diffusion for economic and social development, analysis of obstacles for international technology transfer, including the implications of the international trading regime, standardization and electronic data interchange networks. Regional activities should initially include joint projects, seminars, workshops and training of trainers, and then evolve into demonstration projects for policy makers and technicians.

8. The Regional Round Table observed that the least developed countries, island economies and economies in transition especially required assistance in developing their technology capabilities and, in particular, human resources development for the transfer, adaptation and use of IT. ESCAP, in cooperation with the Asian and Pacific Centre for Transfer of Technology, and all interested more developed countries of the region, should design special programmes for the less developed economies in the region, utilizing bilateral, tripartite and other forms of cooperation as necessary.

B. Information technology and development II: capacity-building, cooperation and social dimensions

9. The Regional Round Table observed that the global economy was increasingly becoming knowledge-based and that knowledge was now widely regarded as the key to sustained development and growth of economies, as well as individuals. Capital accumulation was no longer seen as the main determinant of growth, but knowledge was. The spectacular advances in ICT and the convergence of those technologies, together with the advent of the Internet, had also resulted in the creation of a huge global knowledge pool.

10. The Regional Round Table noted that the ever-evolving and increasingly powerful ICT had fundamentally changed the nature of global relationships, sources of competitive advantage and opportunities for economic and social development. Technologies such as the Internet, personal computers and wireless telephony had turned the globe into an increasingly interconnected network of individuals, firms, schools and Governments communicating and interacting with one another through a variety of channels.

C. Other presentations

11. The Regional Round Table noted the potential contribution to social development that could be made by such ICT applications as telemedicine, tele-education, telework and digital libraries. ICT (and, in particular, the Internet through cyber-kiosks in rural areas) could help to improve the population's health, education and training and to enhance the transparency of the decisions and actions taken by public and private agents in developing countries of the Asian and Pacific region. That could be achieved through the use of ICT, which would help to foster effective linkages among

Governments, the private sector, non-governmental organizations and civil society. However, the penetration, use and impact of ICT were, in turn, determined by economic, technological and social variables.

12. The Regional Round Table noted that the digital divide was posing a major challenge to developing countries and recognized the imperative need to take action to address that concern. It was noted that the sweeping changes in connection with ICT that were occurring in the Asian and Pacific region as it made its transition to an information- and knowledge-based society were marked by significant distributional inequities, both across and within countries. The cost and coverage of telecommunications, of the electrical power infrastructure, and of training human resources and preparing SMEs to function in the digital economy varied widely from country to country. The Regional Round Table appreciated the fact that knowledge was becoming a key resource that needed to be managed effectively. Consequently, changes were necessary in organizational structures in the public and private sectors to enable them to manage knowledge efficiently in an information society.

III. Organization of the Regional Round Table

A. Opening and duration of the Regional Round Table

13. The Regional Round Table on Information Technology and Development was held in New Delhi on 21 and 22 June 2000.

14. The Regional Round Table was opened by Pramod Mahajan, Minister for Information Technology and Parliamentary Affairs of the Government of India, who also delivered the keynote address. The opening statement was made by Kayoko Mizuta, Deputy Executive Secretary of ESCAP. P. V. Jayakrishnan, Secretary of the Ministry of Information Technology of the Government of India, Makarim Wibisono, President of the Economic and Social Council, Ryokishi Hirono, Professor Emeritus at Seikei University, Japan, and Shekhar Bajaj, President of the Associated Chambers of Commerce of India, also addressed the Regional Round Table.

15. The Regional Round Table expressed its full appreciation for the generous support provided and arrangements made by the Government of India in organizing the event.

B. Attendance

16. The Regional Round Table was attended by representatives of the following members and associate members of ESCAP: Afghanistan, Australia, Bangladesh, Bhutan, Brunei Darussalam, Cambodia, China, Democratic People's Republic of Korea, France, Germany, India, Indonesia, Islamic Republic of Iran, Japan, Kazakhstan, Lao People's Democratic Republic, Mongolia, Myanmar, Netherlands, Pakistan, Papua New Guinea, Republic of Korea, Russian Federation, Singapore, Thailand, Tonga, United States of America, Uzbekistan, Vanuatu and Viet Nam.

17. In addition, representatives of the following bodies and organizations attended: Economic and Social Council, United Nations Development Programme, United Nations Educational, Scientific and Cultural Organization, Association of South-East Asian Nations, Asian Development Bank, Asia-Pacific Telecommunity and World Association for Small and Medium Enterprises.

C. Election of officers

18. On the basis of consultations, the following officers were elected by the Regional Round Table:

Chairperson:
S. Lakshminarayanan (India)

Vice-Chairpersons:
M. A. Hossain (Bangladesh)
Oh Kwangsok (Republic of Korea)

D. Agenda and organization of work

19. The Regional Round Table adopted the following agenda:

1. Opening of the Regional Round Table.
2. Election of officers.
3. Adoption of the agenda.

4. Characteristics of a knowledge-based global economy.

5. Implication of IT-led development for the competitiveness, development and management of new products and services.

6. Consensus-building, awareness creation and human resources development for the adoption and use of IT.

7. Knowledge-based economy and development.

8 Partnerships and international cooperation.

9. Adoption of conclusions and recommendations.

E. Adoption of the report

20. The Regional Round Table adopted the report on 22 June 2000.

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Summary

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I. Attendance and organization of work

1. The regional meeting on information technology for development was held in Florianopolis, Santa Catarina, Brazil on 20 and 21 June 2000, and was attended by representatives of the following States members of the Economic Commission for Latin America and the Caribbean (ECLAC): Argentina, Bolivia, Brazil, Chile, Colombia, Costa Rica, Ecuador, El Salvador, Jamaica, Nicaragua, Panama, Paraguay, Peru, Uruguay and Venezuela. It was also attended by Bernd Niehaus, Ambassador of Costa Rica to the United Nations and Vice-President for Latin America and the Caribbean of the Economic and Social Council.

II. Summary of the proceedings

2. At the opening session of the meeting, statements were made by Mr. Niehaus; Reynaldo Bajraj, Deputy Executive Secretary of ECLAC; Ronaldo Sardenberg, Minister for Science and Technology of Brazil; and Esperidião Amin, Governor of Santa Catarina.

3. Mr. Niehaus, speaking on behalf of the President of the Economic and Social Council, said that in the past 10 years an unprecedented revolution had occurred in the field of telecommunications and information management which was having a striking impact on economic and social relations and which had in fact created an entirely new economic environment. Thanks to the digital revolution, a nation's wealth was no longer measured in terms of the value of its natural resources but instead on the basis of the knowledge and talents possessed by its citizens. That revolution offered the developing countries new opportunities for growth, for competing in the world market and for boosting production. If those opportunities were used wisely, it would become possible to create more just societies, but in order for that to be accomplished all the countries of the region, together with the international community, would have to commit themselves to closing the digital divide between rich and poor nations, and the United Nations should play a key role in that endeavour.

4. The Deputy Executive Secretary of ECLAC, after welcoming the participants on behalf of the Executive Secretary of the Commission and conveying to them his confidence in the successful outcome of their work, noted that in addition to the region's natural capital, constructed capital and generous endowment of natural resources, it also possessed an intangible form of capital. That capital was represented by its countries' potential for cooperation based on their common origins, long-standing bonds of solidarity and vision of a shared future. It had been manifested on innumerable occasions, and was all the more important when what was at stake was the full incorporation of the countries of the region into the flows of technical progress that had a direct bearing on the future well-being of the region's population. The current meeting could, therefore, provide inputs for the Economic and Social Council which would enhance its overall perspective and contribute to the success of the high-level segment of the Council's substantive session.

5. The Minister for Science and Technology of Brazil said that the advent of the information society had redefined countries' position within the international economic system. A new technical and economic paradigm was emerging that was shaping the efforts being made by countries to promote development and well-being. The effects of that phenomenon far outstripped those of other systemic economic and financial forces that had influenced the fate of developing countries in recent decades. Thus, it was imperative that a strategy for establishing linkages with the new digital economy be formulated; that strategy should be reflected in the delineation of objectives of social and economic inclusiveness and equity, and in a commitment to safeguard democracy and the exercise of the rights of the individual.

6. The Governor of Santa Catarina said that the meeting's objective could be summed up by a single word: "intelligence". The ability to convert intelligence into an instrument of justice depended upon a modern, innovative use of information technology in accordance with the defining principles of full-fledged citizenship. The great challenge in that respect was to find a way of converting skills into an effective means of reducing social and economic exclusion. In the case of the countries of Latin America and the Caribbean, that challenge took the form of a crucial struggle to preserve the integrity of national sentiment and the genuine integration of the region.

7. The Deputy Executive Secretary of ECLAC then gave a presentation in which he reminded the participants that both innovation and technical change had long figured as fundamental elements in the

thinking of ECLAC. In fact, in the series of studies it had published in the early 1990s concerning its proposal for changing production patterns with social equity, ECLAC had argued that the demands of globalization made it necessary to focus on the role of technological change, and had underscored the importance of competitiveness as an essential factor in economic growth. The purpose of the meeting was to analyse a form of technical change that had taken on enormous importance, and that was reflected in changes in information and communications technologies whose impact had transcended beyond the sphere of production to encompass a wide variety of areas of activity.

8. As indicated in the document submitted to the meeting by ECLAC entitled, "Latin America and the Caribbean in the transition to a knowledge-based society: an agenda for public policy", there was a risk that the new information and communications technologies could heighten existing conditions of inequity and exclusion. On the domestic front, the digital divide could exacerbate the present uneven distribution of income and power, while the digital divide between countries could deepen the differences existing between the developed and developing worlds.

9. In view of its importance as the inevitable point of departure for any information technology strategies or policies that the countries of the region might adopt in the future, the Deputy Executive Secretary of ECLAC provided an overview of the legacy of the 1990s as described in the document prepared by the secretariat. In that connection, he referred in particular to the obvious progress made on the economic and social fronts and to the stagnation or deterioration of income distribution and existing problems with regard to social cohesiveness. Those factors should serve as the backdrop for an in-depth analysis of the possibilities for the adoption of suitable information and communications policies in Latin America and the Caribbean.

10. The ensuing open-ended discussion began with a statement by the representative of Brazil, in which he referred to the context and objectives of the meeting. Brazil felt that opportunities and incentives for the private sector were of prime importance, as were the formation of links between it and the public sector, which was one of the items on the economic agenda, and the provision of access to services for all users, which was an integral component of the social agenda.

11. Statements were then made by the representatives of Peru, Paraguay, Chile, Argentina, Bolivia, Colombia, Costa Rica, Venezuela, Panama, Ecuador, Uruguay and Jamaica, who agreed with the views expressed by the representative of Brazil and the issues addressed in the document prepared by the ECLAC secretariat. They also reported on the activities undertaken by their countries in an effort to provide greater access to information and communications technologies. One of the delegates stated that in addition to defending countries cultural and linguistic integrity, it was also necessary to open up new business opportunities for firms in the region and to set up regional coordination mechanisms in order to protect the market niches that they had managed to occupy. Another representative voiced concern about the fact that the information society's access routes were privately managed, even though the public sector was responsible for defining the framework for that society. The representatives also referred to the need to establish standards that would protect citizens' rights to privacy, ensure the safety of network transactions and prevent crime within that medium. A number of delegations expressed interest in increasing the use of information and communications technologies in education, in the provision of support to small and medium-sized enterprises and in protecting intellectual property rights.

12. In view of the fact that access to information networks was largely determined by its cost, it was proposed that computer laboratories be set up in basic educational institutions so that children might begin computer literacy training at an early age; it was further suggested that network access be provided at municipal centres and public libraries. It was also recognized, however, that the production of materials for distribution via that medium was just as important as the provision of access to the network itself.

13. As the scope of the discussion was broadened to include other areas, the idea was raised of creating mechanisms for external debt negotiations that would permit countries' debt burdens to be reduced in exchange for the execution of activities designed to provide access to the information society; it was noted in that connection that such an initiative would require the identification of specific measures that were found to be relevant for those purposes. Emphasis was also placed on the importance of clearly identifying which areas should be the focus for the application of new

technologies; one of those areas that was particularly significant was education, since if technological development did not go hand in hand with a parallel learning process its benefits would be extremely limited.

14. In view of the myriad policies involved, in order for the region to secure increasingly broader access to the information society, the integration of the public sector, the private sector and civil society was essential. The participants' attention was drawn, *inter alia*, to the need to promote the software industry, which a number of countries had been working to develop in recent decades, with mixed results. It would therefore be in the region's interest to create incentives for that industry, including the relevant marketing activities.

15. On Wednesday morning, 21 June, a panel of experts met to analyse three issues: the past and present technological development of Latin America; information technologies: past and future strategic action; and a case study of cooperation in the field of technological innovation. Presentations on those subjects were given by Jorge Katz, Director of the ECLAC Division of Production, Productivity and Management; Iván Moura Campos, President of Akwan Information Technologies; and Ramiro Jordán, Director of the Ibero-American Consortium for Education in Science and Technology.

16. During the afternoon of 21 June, the delegates met in plenary session and unanimously approved the Declaration of Florianopolis, which set forth the needs identified by the representatives of the countries of the region and their recommendations regarding information technology.

III. Declaration of Florianopolis

17. The Declaration of Florianopolis is set out below.

Declaration of Florianopolis

Bearing in mind decision 1999/281 of the Economic and Social Council, in which the Council resolved that the high-level segment of its substantive session of 2000 should be devoted to the theme "Development and international cooperation in the twenty-first century: the role of information technology in the context of a knowledge-based economy",

Taking into consideration the fact that, in accordance with this decision, representatives of the countries of Latin America and the Caribbean have gathered at the Regional Meeting on Information Technology for Development, convened by the Government of the Federal Republic of Brazil in the City of Florianopolis, Santa Catarina, Brazil, on 20 and 21 June 2000, in order to prepare, in collaboration with the Economic Commission for Latin America and the Caribbean in its capacity as secretariat, for their participation in the high-level segment of the substantive session of the Economic and Social Council, to be held at United Nations Headquarters in New York from 5 to 7 July 2000,

Taking into consideration also the shared aspirations of the Latin American and Caribbean countries to become full-fledged members of the information society by the year 2005 on an efficient, effective and sustainable basis within the framework of the global knowledge-based economy,

Considering that information and communications technologies constitute the central pillar for the construction of a global knowledge-based economy and society, and that they therefore constitute the basis for a new form of organization and production on a worldwide scale that is redefining the way in which the countries position themselves within the world economic system as well as the relationships existing among individuals, culture and the exercise of power and citizenship, and that knowledge will be an increasingly important determinant of competitiveness in the global economy,

Bearing in mind that allowing the evolution of the information and knowledge-based society to be guided solely by market mechanisms entails the risk of an amplification of the social gaps existing within our societies, the creation of new modes of exclusion, an increase in the negative aspects of globalization and a widening of the distances between developed and developing countries,

Cognizant of the great potential that such technologies have to further the social and political development of the countries of the region in such areas as education, health, job training, the eradication of social marginality, the consolidation of citizen participation, transparency in government action and the formation of more open, democratic societies,

Bearing in mind that during the past decade significant progress has been made in the region in correcting fiscal disequilibria, reducing inflation, increasing the pace of export growth, pursuing regional integration processes, attracting foreign direct investment and resuming economic growth, which reached a rate of 3.2 per cent for the region as a whole but which has continued to be insufficient to achieve a significant reduction in existing social and technological gaps, and that the economies of the region continue to register low savings and investment rates, sluggish job creation, pronounced structural heterogeneity and a high degree of external vulnerability and fragility in their financial systems,

Mindful of the fact that the challenges of development and of overcoming the poverty and social marginality that affect 36 per cent of the population require sustained, ongoing economic growth which encompasses sectors that create productive jobs on a large scale and which permits increased, equitable access to all social services,

Considering that, if information technology is suited to our culture and if relevant content is created on an ongoing basis, then diversity can be enhanced and cultural identity reaffirmed,

The representatives of the countries of Latin America and the Caribbean gathered in Florianopolis, taking into account all the aforementioned considerations, hereby urged the Economic and Social Council, at the high-level segment of its substantive session of 2000, to support the developing countries in their efforts to pursue the following courses of action:

1. *Design and implement* public programmes with a view to ensuring that the entire population has access to information and communications technology-related products and services as soon as possible, disseminating their use, promoting the growth of digital network infrastructure, and supporting research, innovation and technological development in general and at the level of individual business enterprises;

2. *Create* the necessary conditions and mechanisms for the universal provision of training to citizens in the use of new technologies and for the achievement of broader computer literacy by, in particular, fostering innovative initiatives in the areas of distance learning, non-formal education and teacher training as an essential basis for enabling the population to play a positive role in new forms of knowledge-based production, while also promoting the access and use of information and communications technologies in methodologies designed to accelerate the educational processes of marginalized population groups and those living in extreme poverty;

3. *Provide* opportunities for sensitization and training in information and communications technologies for political and community leaders, drawing upon the experience gained from programmes designed to promote the information society;

4. *Develop* such mechanisms and make such investments as may be necessary, in collaboration with the private sector, so that all locales in every country of the region will have community centres providing digital connectivity in order to overcome the marginalization of the population from access to services provided by the new economy, including electronic commerce, telemedicine and on-line administrative procedures, by building up physical infrastructure and paving the way for broad access to digital networks;

5. *Promote* more efficient, effective and transparent government administration at all levels by offering on-line information to citizens, management oversight mechanisms, services, administrative procedures and government outsourcing of goods and services via digital networks;

6. *Encourage* the development of technology-based firms by creating such mechanisms as venture capital funds, technology incentive zones and business incubators, with the participation of academic institutions, research centres and the private sector, while also promoting their national, regional and international integration through the use of advanced research and development networks;

7. *Develop* regulatory systems that, in addition to protecting intellectual property rights, minimize the risks and uncertainties of the new environment generated by the new information and communications technologies through the provision of services that will ensure and lead to the swift expansion of electronic commerce by establishing competitive conditions and protecting the privacy and other interests of users, consumers and small-scale producers that engage in electronic commerce;

8. *Actively seek out* forms of financing and means of promoting corporate innovation and modernization, especially for small and medium-sized enterprises, so that firms will have access to new business opportunities, thereby facilitating the creation of new and better employment opportunities;

9. *Strengthen* cultural and science and technology institutions so that they can take full advantage of information and communications technologies that will permit the generation and diffusion of diverse cultural contents of a regional, national or local nature via digital networks;

10. *Promote* research and societal ownership of advanced information and communications technologies and work for the establishment of high-speed networks in the region;

11. *Adopt* measures aimed at reducing the cost of communication services, promoting the development and consolidation of state-of-the-art national and regional communications infrastructure, upgrading the "capillarity" of information and communications networks within their various territorial units, substantially upgrading key functions, such as applicability and inter-operability, and facilitating a swifter diffusion of technological innovations;

12. *Deploy* cooperative regional efforts relating to public policies on information and communications technologies, to include consensus-based participation in relevant international forums concerned with, *inter alia*, electronic trade, security, the protection of privacy and intellectual property rights, and public policies designed to forestall monopolistic practices;

13. *Strengthen* regional cooperation through the introduction of innovative mechanisms, such as the promotion of joint technical/commercial ventures in the information and communications technology sector, that will enhance the value of the region's productive potential and diversity through its integration into the new economy;

14. *Promote* the upgrading and reorganization of public- and private-sector communications infrastructure with a view to creating optimum conditions for interconnectivity and inter-operability, while ensuring sufficient capacity to meet the demands of two-way traffic;

15. *Reinforce* the creation of joint mechanisms for the development, consolidation and marketing of high-technology products and services, such as software development, distance education and others;

16. *Promote* the creation of a regional "observatory" to monitor the impact of information technologies on the economy and other related cooperative measures;

17. *Promote* the generation of reliable, standardized and up-to-date statistical information and indicators on the development of information and communications technologies in the region and its countries, while promoting statistical-system coordination mechanisms;

18. *Foster* the development of local, national and regional content in the native and official languages of the countries of the region and the residence of that content on regional servers with a view to rationalizing access for local and regional traffic and promoting its exchange via the most direct routes;

19. *Adopt* measures that will permit a reduction to be made in the developing countries' external debts in exchange for funds that those countries will devote to their programmes for promoting economic and social development through the use of information and communications technologies;

20. *Call upon* the international community to provide technical and financial cooperation at both the multilateral and bilateral levels in facilitating the aforementioned internal efforts, and invite the relevant private firms in developed countries to join in this cooperative effort.